What is Claimed is:

1. A method of monitoring power quality in an electric power distribution system comprising:

repetitively determining values of a plurality of selected parameters of the electric power distribution system;

generating a composite power quality indicator from the values of the plurality of selected parameters; and

generating an output representing the composite power quality indicator.

2. The method of Claim 1, wherein generating the composite power quality indicator comprises performing statistical analysis of the values of the plurality of selected parameters.

3 The method of Claim 1, wherein generating the composite power quality indicator comprises generating a power quality component for each of the plurality of selected parameters and combining the power quality components to produce the composite power quality indicator.

4. The method of Claim 3, wherein combining the power quality components to produce the composite power quality indicator comprises assigning each power quality component an associated weighting factor selected to produce a selected weighting of the power quality component, multiplying each power quality component by its associated weighting factor to generate the power quality component and adding the weighted power quality components to generate the power quality index.

5. The method of Claim 4, wherein combining the power quality components further comprises maintaining the selected weighting by establishing a power quality component sensitivity for each of the plurality of selected parameters and multiplying the power quality component by the power quality component sensitivity and the associated weighting factor.

6. The method of Claim 5, wherein establishing each power quality component sensitivity comprises maintaining a long-term mean value for each power quality component and a long-term mean value for the composite power quality indicator, and multiplying the associated weighting factor by a ratio of the

composite power quality indicator long-term mean value to the power quality component long-term mean value.

7. The method of Claim 6, wherein establishing the power quality component sensitivity comprises updating each power quality component sensitivity by multiplying a most recent power quality component sensitivity by the associated weighting factor and the ratio of the composite power quality indicator long-term mean to the power quality component long-term mean.

8. The method of Claim 7, wherein generating the composite power quality indicator further comprises generating at least one dynamic threshold for the composite quality indicator by generating a standard deviation of the long-term mean of the composite power quality indicator and generating the at least one dynamic threshold as a function of the standard deviation, and generating the output comprises generating a representation of the composite power quality indicator relative to the long-term mean of the composite power quality indicator and relative to the at least one dynamic threshold.

9. The method of Claim 1, wherein generating the composite power quality indicator further comprises generating at least one dynamic threshold for the composite power quality indicator and wherein generating the output comprises generating a representation of the composite power quality indicator relative to the at least one dynamic threshold.

10. The method of Claim 9, wherein generating the at least one dynamic threshold comprises generating a long-term mean of the composite power quality indicator, generating a standard deviation of the long-term mean of the composite power quality indicator and generating the at least one dynamic threshold as a function of the standard deviation, and generating the output comprises generating a representation of the composite power quality indicator relative to the long-term mean of the composite power quality indicator as well as relative to the at least one dynamic threshold.

11. The method of Claim 10, wherein generating the long-term mean of a composite power quality indicator comprises generating a moving average of the composite power quality indicator over a selected time period.

12. The method of Claim 11, wherein generating the composite power quality indicator over the selected time period comprises generating a first moving average of the composite power quality indicator over a first time period and generating a second moving average of the composite power quality indicator over a second time period which is a multiple of the first time period, and generating the composite power quality indicator using only the first moving average until the method has been employed for the second time period and thereafter generating the composite quality indicator using the second moving average.

13. The method of Claim 12, wherein the first time period is about one week and the second time period is about one year.

14. A power quality monitor for an electric power distribution system comprising:

sensors for sensing currents and voltages in the electric power distribution system;

processing means comprising means for repetitively determining values of selected parameters from the currents and voltages and for statistically generating a composite power quality indicator from the values of the selected parameters; and

output means providing a representation of the composite power quality indicator.

15. The monitor of Claim 14, wherein the processing means comprises means generating power quality components from the values of the selected parameters and combining the power quality components to generate the composite power quality indicator.

16. The monitor of Claim 14, wherein the process means comprises means generating a long-term mean of the composite power quality indicator and the output means comprises a display displaying the composite power quality indicator relative to the long-term mean of the composite power quality indicator.

17. The monitor of Claim 16, wherein the processing means further comprises means generating a standard deviation of the long-term mean of the composite power quality indicator and at least one dynamic threshold as a function of

the standard deviation, and the display further displays the composite power quality indicator relative to the at least one dynamic threshold.

18. The monitor of Claim 17, wherein the processing means comprises means generating a first dynamic threshold as a first function of the standard deviation and a second dynamic threshold as a second function of the standard deviation that is greater in value than the first function of the standard deviation, and wherein the display displays the first and second dynamic thresholds relative to the long-term mean of the composite power quality indicator to define a safe zone for the composite power quality indicator between the long-term mean of the power quality indicator and the first dynamic threshold, a caution zone between the first and second dynamic thresholds, and an alert zone farther from the long-term mean of the composite power quality indicator than the second dynamic threshold.

19. The monitor of Claim 18, wherein the processing means comprises means generating power quality components from values of the selected parameters, means providing a selected weighting of each power quality component by applying a selected weighting factor to that power quality component to generate weighted power quality components, and means combining the weighted power quality components to generate the composite power quality indicator.

20. The monitor of Claim 19, wherein the processing means further comprises means maintaining the weighting of each power quality component by applying a continually adjusted sensitivity to each weighted power quality component derived from the long-term mean of the composite power quality indicator and a long-term mean of the power quality component.